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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/441,199 11/16/99 YAMAGUCHI

T 2185-0380P

IM22/0326  
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 EXAMINER

MULLIS, J

ART UNIT	PAPER NUMBER
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1711

 DATE MAILED:

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

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## Office Action Summary

Application No. 09/441,199	Applicant(s) Yamaguchi et al.
Examiner Jeffrey Mullis	Group Art Unit 1711

Responsive to communication(s) filed on Feb 20, 2001

This action is FINAL.

Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

### Disposition of Claims

Claim(s) 1-9 is/are pending in the application.

Of the above, claim(s) 6-9 is/are withdrawn from consideration.

Claim(s) \_\_\_\_\_ is/are allowed.

Claim(s) 1-5 is/are rejected.

Claim(s) \_\_\_\_\_ is/are objected to.

Claims \_\_\_\_\_ are subject to restriction or election requirement.

### Application Papers

See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

The proposed drawing correction, filed on \_\_\_\_\_ is  approved  disapproved.

The specification is objected to by the Examiner.

The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. § 119

Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

All  Some\*  None of the CERTIFIED copies of the priority documents have been

received.

received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_.

Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

### Attachment(s)

Notice of References Cited, PTO-892

Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_

Interview Summary, PTO-413

Notice of Draftsperson's Patent Drawing Review, PTO-948

Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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Applicants' election without traverse of Group I, claims 1-5 in Paper No. 6 is acknowledged.

Applicants' election with traverse of the species liquid crystal polyester as the thermoplastic and acrylate-ethylene copolymer rubber as the rubber in Paper No. 6 is acknowledged. The traversal is on the ground(s) that there is no undue burden placed on the Examiner to consider all the subject matter within the scope of claims 1-5. This is not found persuasive because the search for the various species is not co-extensive and therefore additional search would be required.

The requirement is still deemed proper and is therefore made FINAL.

Claim 3 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicants are required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 1 from which claim 3 ultimately depends already recites that rubber is converted to a molten state and that such molten rubber is melt kneaded with the thermoplastic resin. Therefore since the rubber is treated initially, it must be upstream from the thermoplastic.

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Claims 1-5 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention.

It is not clear what is intended by the phrase "molten by a rubber kneading machine" since it is not stated what the word "molten" has to do with the rubber kneading machine.

It is not clear what is meant by "and fed into an extruder" in that in the two lines preceding this phrase there is reference to solid rubber as well as molten rubber and it is therefore ambiguous as to whether the solid or molten rubber is fed into the extruder.

It is not clear what is meant by "a melt viscosity" as recited in claim 2 since this phrase implies that more than one melt viscosity is present for a particular rubber as recited in claim 2. Furthermore, the requirement that rubber is molten at a particular viscosity makes no sense given that melt viscosity has no meaning except where a material is molten. Lastly, it is not clear what the diameter recited in claim 2 has to do with the viscosity since viscosity should be independent of the nozzle for extrusion.

Claim 3 lacks antecedent basis in claim 1 in that the phrase "located at a downstream position of the extruder" implies that the process of claim 1 is performed in a single extruder while

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claim 1 does not recite this. Furthermore, claim 1 does not recite that an extruder is used to treat the rubber prior to addition to the thermoplastic at all and claim 3 furthermore lacks antecedent basis in claim 1 for this reason also.

The term "block-like" in claim 4 is unclear in that the term "like" is subjective. Furthermore, the term "block" in the chemical arts generally refers to a polymer segment containing a number of monomer units in the polymer with more than one segment while the alternative of a "bale" would imply that possibly applicants are referring to a geometric shape.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary

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skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 are rejected under 35 U.S.C. § 102(e) as being anticipated by Guntherberg et al. (USP 6,165,399).

Guntherberg et al. disclose a process in which polymeric components are blended in an extruder in which an elastomeric component "A" is converted to a melt and then blended with a thermoplastic. Note the Abstract and column 11 lines 6-18. Use of block copolymers is disclosed at column 20 lines 51-63.

It is noted that Guntherberg does not disclose applicants' elected species. However the search has not been extended beyond applicants' elected species although the above rejection under 35 U.S.C. § 102 has been made to accelerate prosecution.

Claims 1-5 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Guntherberg et al., cited above in view of either Furuta et al. (USP 5,997,765) or Haider et al. (USP 5,216,073).

Guntherberg et al. does not disclose applicants' elected species. Furthermore, applicants arguably may mean something other than a block copolymer in claim 4 and may be referring to a geometric shape.

Furuta et al. and Haider disclose compositions containing elastomeric ethylene/acrylic rubber and liquid crystal

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polyesters. Note the Abstract and column 10 line 67 of Furuta et al. and the Examples of Haider et al. Note that both secondary references disclose specific advantages to the use of liquid crystalline polymers as opposed to quaternary thermoplastics such as improved stiffness and chemical resistance. Note Haider et al. at column 1 lines 27-30 and that the specific blend of Haider et al. has superior properties over even ordinary liquid crystalline compositions at column 2 lines 5-10. Note Furuta et al. discloses superior flow properties at column 1 lines 17-21 for their liquid crystalline polymer blends having rubber therein.

It would have been obvious to a practitioner having ordinary skill in the art at the time of the invention to use the specific liquid crystalline polymer thermoplastic/elastomer blends of the secondary references in the primary reference motivated to extend the improved properties of rubber/thermoplastic blends from the secondary reference to that of the primary reference absent any showing of surprising or unexpected results.

With regard to the use of rubber bales, it was widely known at the time of the invention that rubber was available commercially in the form of bales and furthermore it would have been obvious to a practitioner that bales of rubber have an advantage, for instance particulate rubber, in that particulate rubber needs to be contained somehow.

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It would have been obvious to a practitioner having ordinary skill in the art at the time of the invention to use bales of rubber in the process of the primary reference motivated by the need for a commercial source of rubber and further motivated by the advantage accruable by use of bales and that bales need no container and can be moved as such while particulate rubber needs to be scooped etc. absent any showing of surprising or unexpected results.

Any inquiry concerning this communication should be directed to Jeffrey Mullis at telephone number (703) 308-2820.

J. Mullis:cdc

March 8, 2001

Jeffrey Mullis  
Primary Examiner  
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